

**REMARKS**

This Application has been carefully reviewed in light of the Office Action mailed July 14, 2003. Applicants appreciate the Examiner's consideration of the Application. Claim 37 has been cancelled, and Claims 31, 40, 42, 48, and 52 have been amended to clarify, more particularly point out, and more distinctly claim inventive concepts previously present in these claims. Applicants respectfully submit that no new matter has been added by the amendments to the claims. In order to advance prosecution of this Application, Applicants have responded to each notation by the Examiner. Applicants respectfully request reconsideration and favorable action in this case.

**Section 103(a) Rejection**

The Examiner rejected Claims 31-52 under 35 U.S.C. § 103(a) as being unpatentable as follows:

(1) Claims 31, 33-40 are rejected as being unpatentable over O'Mahony ("Non-Linear Optical Transmission Systems", 1993) (*O'Mahony*) in view of U.S. Patent 5,361,319 issued to Antos et al. (*Antos*), U.S. Patent 5,726,789 issued Horiuchi et al. (*Horiuchi*), U.S. Patent 5,570,438 issued to Fontana et al. (*Fontana*);

(2) Claims 32 are rejected as being unpatentable over *O'Mahony*, *Antos*, *Horiuchi*, *Fontana*, and U.S. Patent 5,267,073 issued to Tamburello et al. (*Tamburello*);

(3) Claim 41 are rejected as being unpatentable over *O'Mahony*, in view of *Antos*, *Horiuchi*, and *Fontana*;

(4) Claims 42-45 and 47-49 are rejected as being unpatentable over *O'Mahony* in view of European Patent Application EP 0690534 A2 from AT&T Corp. (*AT&T*), and *Horiuchi*;

(5) Claim 46 is rejected as being unpatentable over *O'Mahony* in view of *AT&T*, *Horiuchi*, and U.S. Patent 4,093,919 A issued to Watanabe (*Watanabe*);

(6) Claims 50-51 are rejected as being unpatentable over *O'Mahony* in view of *AT&T*, *Horiuchi*, and U.S. Patent 5,946,117 A issued to Meli et al. (*Meli*); and

(7) Claim 52 is rejected as being unpatentable over *AT&T* in view of *Horiuchi*.

Applicant respectfully traverses this rejection for the reasons discussed below.

First, *O'Mahony*, whether considered alone or in combination with other references, fails to disclose, teach, or suggest:

(1) "a first optical conductor element, having a first chromatic dispersion at said transmission wavelength, the first optical conductor element comprising step-index fiber", (recited in Applicants' independent Claim 31 as amended);

(2) "supplying the optical signal in an optical-fibre line having a chromatic dispersion and comprising a plurality of stretches of step-index fiber", (recited in Applicants' independent Claim 40 as amended); and

(3) the "fibre-optic line" comprising "a step-index fiber having an overall chromatic dispersion greater than zero at the wavelength of said optical signal", (recited in Applicants' dependent Claim 48 as amended).

The Examiner states in the Office Action:

Regarding claim 37, O'Mahony discloses that the first optical conductor element may be an optical fiber but does not specifically disclose that it may be a step-index optical fiber. However, step-index optical fibers are well known in the art, as Fontana et. al. in particular teach (column 6, lines 44-46) for use in a pulsed transmission system. It would have been obvious to specifically use step-index optical fiber in the system disclosed by O'Mahony as an obvious engineering design choice, especially since O'Mahony already discloses an optical fiber.

(Office Action, page 6, paragraph 2). Applicants respectfully disagree. *O'Mahony* states, "Equ. (32) shows that to maximize the repeater spacing the dispersion coefficients must be minimised. Thus dispersion shifted fibre must be used for soliton systems." (*O'Mahony*, page 637, section 5.2.2. Fibre Loss, paragraph 4) (emphasis added). That is, *O'Mahony* not only fails to disclose, teach, or suggest the use of step-index fiber, but *O'Mahony* clearly teaches away from using anything other than dispersion shifted fiber. Therefore, it is improper to combine *O'Mahony* with *Fontana* as suggested by the Examiner, and furthermore, it would not be obvious to one skilled in the art to modify *O'Mahony* to include the use of step-index fiber because *O'Mahony* clearly teaches away from that modification. Consequently, Applicants respectfully request that the Examiner withdraw the rejections to Claims 31, 40, and 48 as amended.

Second, *AT&T*, whether alone or in combination with other references, fails to disclose, teach, or suggest "a circuit for generating a third periodic electrical signal at a third frequency which is a harmonic higher than the second harmonic of said first frequency", recited in Applicants' independent Claim 42 as amended.

The Examiner claims that *AT&T*'s frequency doubler 555 and phase control 565 disclose Applicants' circuit and that *AT&T*'s combiner 585 discloses Applicants' combining elements. Applicants respectfully disagree. *AT&T*'s Figure 8 clearly shows that the frequency doubler 555 and phase control 565 at most generate a signal with the second harmonic of the signal generated by the synthesizer 510. *AT&T* neither mentions nor suggests a third periodic signal at a third frequency which is a harmonic higher than the second harmonic of the first frequency. In fact *AT&T* states, "The splitter 520 is a three way splitter (which may comprise two two-way splitters), with one output being the clock signal for the pattern generator 540, the second output being a first sinusoid signal and the third output being input to a frequency doubler 555 for creating the second harmonic of the first sinusoid." (*AT&T*, column 7, lines 6-12). That is, at most *AT&T* discloses generating a second signal which is a second harmonic of the periodic signal, but does not disclose "a circuit for generating a third periodic electrical signal at a third frequency which is a harmonic higher than the second harmonic of said first frequency" as recited in Applicants' Claim 42 as amended. Therefore, Applicants respectfully submit that *AT&T* fails to disclose, teach, or suggest the combination of limitations recited in Applicants' Claim 42 and, for similar reasons, Claim 52. Consequently, Applicants respectfully request that the Examiner withdraws this rejection.

For at least the reasons provided above, neither *O'Mahony* nor *AT&T*, whether alone, combined with each other, or combined with other references, disclose, teach, or suggest the limitations recited in Applicants' independent Claims 31, 40, 42, and 52. Applicants' dependent Claims 32-36, 38-39, 41, and 43-51 are allowable based on their dependence on the independent claims. Because Applicants believe they have amply demonstrated the allowability of the independent claim over the prior art, and to avoid burdening the record, Applicants have not provided detailed remarks concerning the dependent claims. Applicants, however, remain ready to provide such remarks if it becomes appropriate to do so.

Applicants therefore respectfully request reconsideration and allowance of Applicants' independent Claims 31, 40, 42, and 52 and all claims that depend on these claims.

**CONCLUSION**

Applicants have made an earnest attempt to place this case in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all the pending claims.

If the Examiner believes a telephone conference would advance prosecution of this case in any way, the Examiner is invited to contact Keiko Ichiye, the Attorney for Applicants, at the Examiner's convenience at (214) 953-6494.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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